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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/909,927 | 07/20/2001 | Kenneth Perlin | NYU-7 | 2411 |

7590 08/07/2003

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Pittsburgh, PA 15213

EXAMINER

NGUYEN, KEVIN M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2674

DATE MAILED: 08/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,927

Applicant(s)

PERLIN ET AL.

Examiner

Kevin M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show 10, 12, 14, 16, 18, 20, 22, 24 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code at pages 4, 16 and 21-23. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 7, 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards (US 6,057,811) in view Allio (US 5,808,599), and further in view of Aye et al (US 5,886,675).

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As to claims 1 and 7, Edwards teaches a 3D image display device associating a method comprising a display screen 12; a light blocking shutter 20, 22; a display control circuit 16, 28; a left eye, a right eye (see figures 1, column 3, lines 42-66).

Edwards fails to teach 1/3 of each stripe of the image on the display screen during each of at least three distinct phase as red, green and blue. However, Allio teaches a related display image device including 1/3 of each stripe of the image on the display screen during each of at least three distinct phase as red, green and blue (see figure 10, column 14, line 41-67). It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide the teaching of Allio for 1/3 of each stripe of the image on the display screen during each of at least three distinct phase as red, green and blue to Street's image display device because this would obtain focal lengths that are smaller and to obtain observed areas that are smaller, thereby avoiding the observer perceiving the dot structure of color points and pixel on the screen (column 1, lines 52-55 of Allio).

Edwards and Allio fail to teach an eye tracker. However, Aye et al teach an eye tracker 42 (see figure 2). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize the eye tracker 42 to Edwards' and Allio's image display device because this would provide the capability for real-time auto stereoscopic display together with an impressive look-around feature.

As to claim 2, Edwards teaches rear projection screen 12 (see figure 9).

As to claim 3, Edwards teaches a 3D image display device associating a method comprising a controllers 16, 28 (a field programmable gate array) in communication with

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the projection screen 12 and the shutter 20, 22 with synchronizes the phases between the shutter 20, 22 and the projection screen 12 (see figure 1).

As to claims 4 and 11, Edwards teaches a 3D image display device associating a method comprising a projector 10 (see figure 2).

As to claim 8, Aye et al teach forming step of encoding into 1-dimensional bit-maps (see figure 9).

5. Claims 5, 6, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards in view of Allio in view of Aye et al, and further in view of Johnson et al (US 5,231,521).

As to claims 5, 6, 9 and 10, Edwards, Allio, and Aye et al teach all of the claimed limitations of claims 1 and 7, except for a ferroelectric liquid crystal display (LCD) and a pi-cell. However, Johnson et al teach the ferroelectric liquid crystal display (LCD) and the pi-cell (see figure 2). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize the ferroelectric liquid crystal display (LCD) and the pi-cell taught by Johnson et al for Edwards', Allio's, and Aye et al's display screen because this would be optimized for increased spectral discrimination, improved single and multiple stage filters, discretely tunable and continuously tunable filters (column 4, line 65 of Johnson et al).

6. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Street (US 5,712,732) in view of Allio (US 5,808,599).

As to claims 1 and 7, Street teaches a 3D image display device associating a method comprising a display screen 89; a light blocking shutter 88; stripe pattern 92

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allows 1/4 of each stripe of the image on the display screen during each of at least three distinct phase as red, green and blue; a display control circuit 9, a left eye 90, a right eye 91, an eye tracker 93 (see figures 23, column 17, lines 1-18) 1/4 of each stripe of the image on the display screen during each of at least three distinct phase as red, green and blue.

Street fails to teach 1/3 of each stripe of the image on the display screen during each of at least three distinct phase as red, green and blue. However, Allio teaches a related display image device including 1/3 of each stripe of the image on the display screen during each of at least three distinct phase as red, green and blue (see figure—10, column 14, line 41-67). It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide the teaching of Allio for 1/3 of each stripe of the image on the display screen during each of at least three distinct phase as red, green and blue to Street's image display device because this would obtain focal lengths that are smaller and to obtain observed areas that are smaller, thereby avoiding the observer perceiving the dot structure of color points and pixel on the screen (column 1, lines 52-55 of Allio).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Nguyen whose telephone number is 703-305-6209. The examiner can normally be reached on MON-THU from 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A Hjerpe can be reached on 703-305-4709. The fax phone

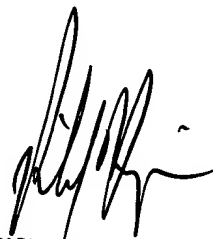
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numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-306-0377 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Kevin M. Nguyen
Patent Examiner
Art Unit 2674

KN
July 31, 2003



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
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